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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,792	10/16/2003	Vladimir Lifshits	002139-013410US	9680

20350 7590 11/16/2004

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

COCKS, JOSIAH C

ART UNIT

PAPER NUMBER

3749

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/688,792

Applicant(s)

LIFSHITS ET AL.

Examiner

Josiah Cocks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2003.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 3-19 is/are rejected.
7) ☒ Claim(s) 2 and 20 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. However, the examiner notes that all the references listed in applicant's specification have been cited on the attached form PTO-892 and have therefore been considered by the examiner.

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the current drawings include handwritten reference characters that are difficult to read. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-5, 8, 9, 13, 14-17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,895,514 to Cantryn et al. ("Cantryn").

Cantryn discloses in Figures 1-4 the invention as described in applicant's 1, 3-5, 8, 9, 13, 14-17, and 19. In particular, Cantryn discloses in Figure 4 a heater for heating a gaseous stream flowing in a downstream direction through a duct, the heater comprising a heating gas supply pipe (10), a flame shield (12) having plates extending obliquely, and a plurality of gas supply spuds disposed upstream of the flame shield (see Fig. 4 and note openings/spud 14" and unnumbered openings/spuds feeding pipes 50). The plurality of pipes (50) (see col. 3, lines 43-49 noting a plurality of pipes) are considered to be the jet pumps as claimed by applicant. These jet pumps, are supplied from the gas supply pipe (10) and extend parallel to one another with widened outlets downstream of the flame shield (see Fig. 4). The jet pumps (50) may be arranged on either side of the burner supply pipe (10) (see col. 3, lines 54-63). Flame shield includes orifices (24) for duct gases to pass through.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7, 10-12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cantryn as applied to claims 1 and 17 above.

In regard to claim 7, Cantryn discloses that convergent-divergent nozzles (considered to be the have flared inlets as recited) are used where it is desired to drawn in air to mix with combustion supporting gas (see col. 2, lines 54-68). The examiner considers that a person of ordinary skill in the art would reasonably understand that the inlets to pipe/jet pump (50) would be flared if these pumps were functioning to entrain air to mix with gaseous fuel supplied from gas supply pipe (10).

In regard to claims 11 and 12 Cantryn discloses that ratio of air to fuel (i.e. the stoichiometric ration) and the fuel pressure may be adjusted as desired to optimum values (see col. 3, lines 6-29). Therefore, the examiner considers that the values recited in applicant's claims 11 and 12 would be obtainable through routine experimentation for the purpose of obtaining optimum value and are not regarded as patentbly distinct. See MPEP 2144.05(II)(A).

In regard to claims 10 and 19, Cantryn discloses that some portion of fuel is supplied through pipes/jet pumps (50) but does not specify any percentage values. Again, the examiner considers that a person of ordinary skill in the art would reasonably be able to obtain the percentage values recited in applicant's claims through routine experimentation. See MPEP 2144.05(II)(A).

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7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantryn as applied to claim 1 above, in view of U.S. Patent No. 4,737,100 to Schnell et al. ("Schnell").

Cantryn discloses all the limitations of claim 6 except that the jet pumps are oriented in a divergent manner and spaced by an angle of less than about 60 degrees.

Schnell teaches a heater in the same field of endeavor as Cantryn. In Schnell fuel streams are injected into a combustion area at angles (see Figs. 6 and 8) that range from about 5 to 75 degrees (Fig. 6) and 10 to 150 degrees (Fig. 8).

Therefore, in regard to claim 6, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Cantryn to angle the jet pumps as the angles taught by Schnell as it is understood in the art that fuel injection angles may be adjusted as desired (see Schnell, col. 5, lines 46-48) to contribute to desirably effects such as better combustion, shorter flame lengths, high turn down capability, and even heat distribution (see Schnell, col. 6, lines 30-42).

Allowable Subject Matter

8. Claims 2 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. This action is made non-final. A THREE month shortened statutory period for reply has been set. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no

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event, however, may a reply be timely filed after SIX (6) months from the mailing date of this communication.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents to Vosper ('211), Goodnight, Vosper et al. ('795), Backlund et al., Bury, and foreign patents EP 0 654 637, and GB 2 117 506 are included to further show the state of the art concerning burner and heaters in ducts.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Any questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (571) 272-4874. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus, can be reached at (571). The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc
November 14, 2004


JOSIAH COCKS
PRIMARY EXAMINER
ART UNIT 3749